

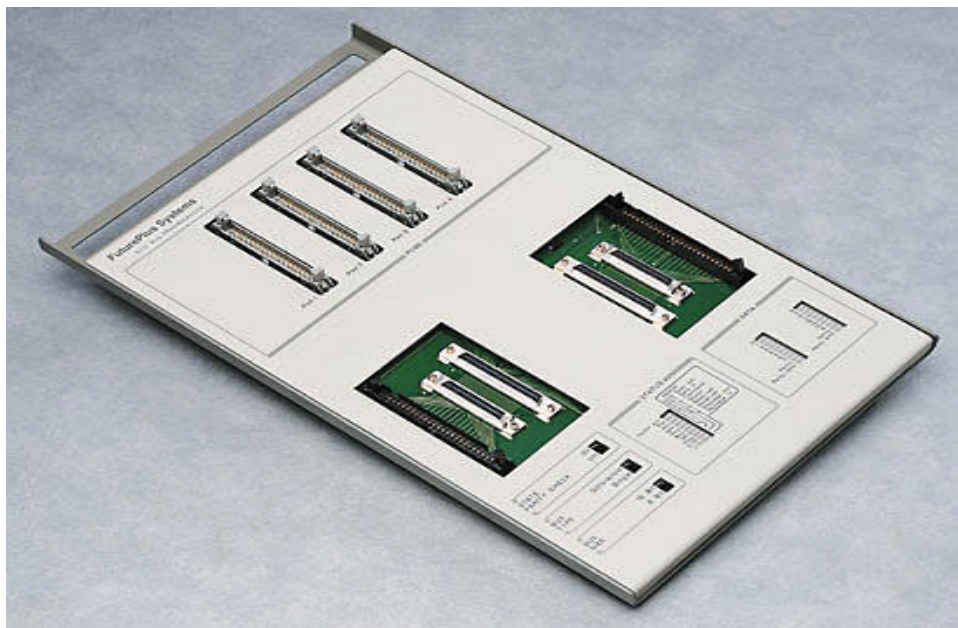
SCSI

Small Computer System Interface Analysis Probe For Use With HP Logic Analyzers

With these versatile products, designers can use their HP logic analyzer as a passive SCSI Bus analyzer. The FuturePlus protocol-sensitive logic and SCSI Transaction Inverse Assemblers, coupled with the advanced triggering and system performance software of HP's logic analyzers, give the user a powerful tool in debugging, testing, and verifying compliance of SCSI peripherals and SCSI-based systems.

Features

- Passive SCSI Bus Analysis
 - Automatic configuration of your HP logic analyzer
 - Requires only 2 logic analyzer pods
 - Seven transaction inverse assemblers included
 - Enhanced triggering and store qualification capabilities
 - Cross-domain analysis and system performance software for complete SCSI performance monitoring
- | | |
|---|--|
| <u>FS2230:</u> | <u>FS2231:</u> |
| ■ 8 or 16-bit bus | ■ 8 or 16-bit bus |
| ■ Up to 20 Mega Transfers per second | ■ Up to 40 Mega Transfers per second |
| ■ Single-ended or High Voltage Differential | ■ Single-ended or Low Voltage Differential |



FS2230, FS2231 SCSI Bus Analysis Probes

FS2230 And FS2231 Description:

The FS2230 and FS2231 analysis probes provide an **electrical and mechanical interface** from the SCSI Bus to Hewlett-Packard logic analyzers for passive bus analysis. The analysis probes allow three modes of bus analysis:

1) State Analysis Mode

The software included with both the FS2230 and FS2231 contains complete configuration files and seven FuturePlus SCSI Transaction Inverse Assemblers for your HP logic analyzer. In **State Analysis** mode, the analyzer master clock is derived from the SCSI Protocol. The SCSI parallel data is then clocked into the logic analyzer with the analysis probe. This allows easy triggering, store qualification and performance monitoring of the SCSI bus. The FS2230 and FS2231 display Select/Reselect, Arbitration, Commands, Messages, Status, Reset, and Bus Free.

2) Timing Analysis Mode

The FS2230 and FS2231 analysis probes have two pods dedicated to timing analysis of the SCSI bus. In **Timing Analysis** mode, the analyzer master clock is provided by the logic analyzer and allows the user to make accurate and precision timing measurements.

3) Performance Analysis Mode

The FS2230 and FS2231 analysis probes and HP's B4600A System Performance Analysis (SPA) software turn your HP logic analyzer into a powerful SCSI system performance monitor. You can generate statistical representations of data captured by the FS2230 or FS2231, which will help you to (1) find bus transactions being used most often, (2) identify inefficiencies in a peripheral, or (3) identify processes that are using too much CPU time.

Devices Supported

The FS2230 and FS2231 provide analysis of Direct Access, Sequential, Printer, Processor, Scanner, Automatic Media Changer, Communication, Write Once Read Multiple, Optical and CD ROM devices, among others.

Cross-Domain Analysis

Are you analyzing data in multiple domains? Simply use these analysis probes to monitor the SCSI bus, and then use another FuturePlus Systems analysis probe to monitor your other bus. We have analysis probes for the Fibre Channel, AGP, PCI, ISA, VME, VXI, PMC, USB, DIMM and SIMM buses. You can create your own custom measurement system, cross-domain trigger between buses, and view data from multiple buses simultaneously in the same display. In a similar fashion, you could connect a analysis probe for your host processor to another logic analyzer card. You could then use HP's Software Analyzer (B4620A) to view source code, code execution, and the corresponding SCSI traffic simultaneously.

Connecting to the SCSI Bus

Three types of connectors are included on the **FS2230** for various versions of the SCSI bus:

SCSI 1: a 50-pin low density connector with an 8-bit data bus. The connector is unshielded, and is rectangular with a 2 X 25 pin pattern on 0.1 inch centers.

SCSI 2: a 50-pin high density connector with an 8-bit data bus. The connector is shielded, and is a D-type with screws and latches.

SCSI 3: a 68-pin high density connector with a 16-bit data bus. The connector is shielded, and is a D-type with screws.

For the **FS2231**, two type of connectors are included:

SCSI 2: a 50-pin high density connector with an 8-bit data bus. The connector is shielded, and is a D-type with screws and latches.

SCSI 3: a 68-pin high density connector with a 16-bit data bus. The connector is shielded, and is a D-type with screws.

HP Logic Analyzers Supported

2 logic analyzer pods are required for state analysis;

4 pods are required for simultaneous state and timing analysis

Logic Analysis System Modules

HP 16700A Logic Analysis System (requires Logic Analyzer Card)

HP 16500B/C Logic Analysis System (requires Logic Analyzer Card)

HP 16505A Prototype Analyzer (requires 16500B/C)

HP 16600A, 16601A, 16602A, 16603A (12,8,6,4 pods)

HP 16550A (6 pods)

HP 16554A, 16555A/D, 16556A/D (4 pods)

Benchtop Logic Analyzers

HP 1660A/C, 1661A/C, 1662A/C (8,6,4 pods)

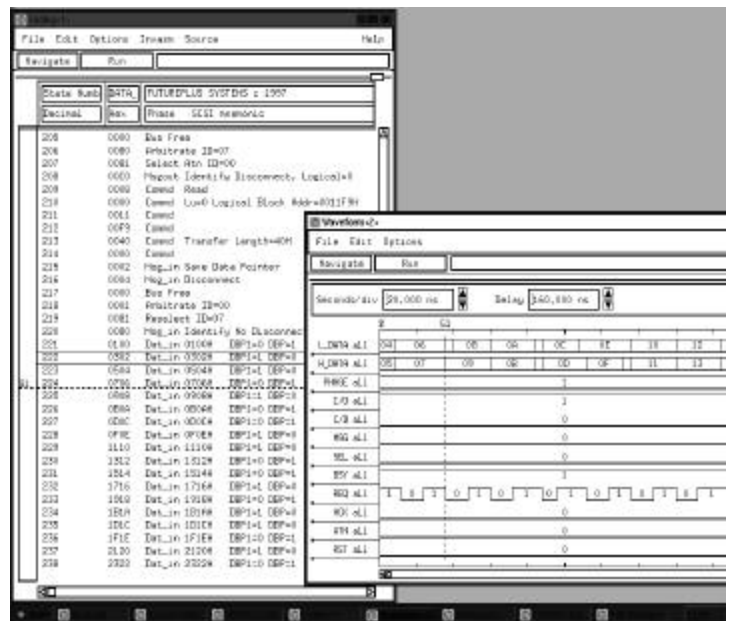
HP 1670A/D, 1671A/D, 1672A/D (8,6,4 pods)

State Analysis

State Number	Data	Phase	Time
121	0000	Bus Free	1,400 us
122	0080	Arbitrate ID=07	29,329 us
123	0081	Select Atn ID=00	2,264 us
124	0080	Msgout Atn Identify No Disconnect Logical=0	6,648 us
125	0001	Msgout Atn Extended Message	1,600 ns
126	0002	Msgout Atn 02H bytes follow	3,000 us
127	0003	Msgout Atn Wide Data Transfer 16 bits	2,496 us
129	0001	Msgin 01H	1,000 us
129	0001	Msgin Extended Message	1,600 ns
130	0002	Msgin 02H bytes follow	2,320 us
131	0003	Msgin Wide Data Transfer 16 bits	176,000 ns
132	0001	Msgin 01H	2,136 us
133	0000	Cmdn Test Unit Ready	8,604 us
134	0000	Cmdn Loo0	280,600 ns
135	0000	Cmdn	192,000 ns
136	0000	Cmdn	176,000 ns
137	0000	Cmdn	176,000 ns
138	0000	Cmdn	168,000 ns
139	0000	Status Good	7,904 us
140	0000	Msgin Cmdn Complete	9,904 us
141	0000	Bus Free	1,300 us
142	0080	Arbitrate ID=07	24,600 us
143	0081	Select Atn ID=00	2,272 us
144	0080	Msgout Atn Identify No Disconnect Logical=0	6,144 us
145	0001	Msgout Atn Extended Message	1,400 us
146	0002	Msgout Atn 02H bytes follow	3,600 us
147	0001	Msgout Atn Sync Xfer Req Period=0AH Offset=1FH	2,704 us
148	000A	Msgout Atn 0AH	2,096 us
149	001F	Msgout 1FH	336,000 ns
150	0001	Msgin Extended Message	279,632 us
151	0003	Msgin 03H bytes follow	2,782 us
152	0001	Msgin Sync Xfer Req Period=0AH Offset=1FH	144,000 ns
153	000A	Msgin 0AH	176,000 ns
154	001F	Msgin 1FH	2,572 us

An easy-to-read, well organized state transaction listing shows you all the information you need to solve complex hardware and software problems on your SCSI Bus.

Timing Analysis



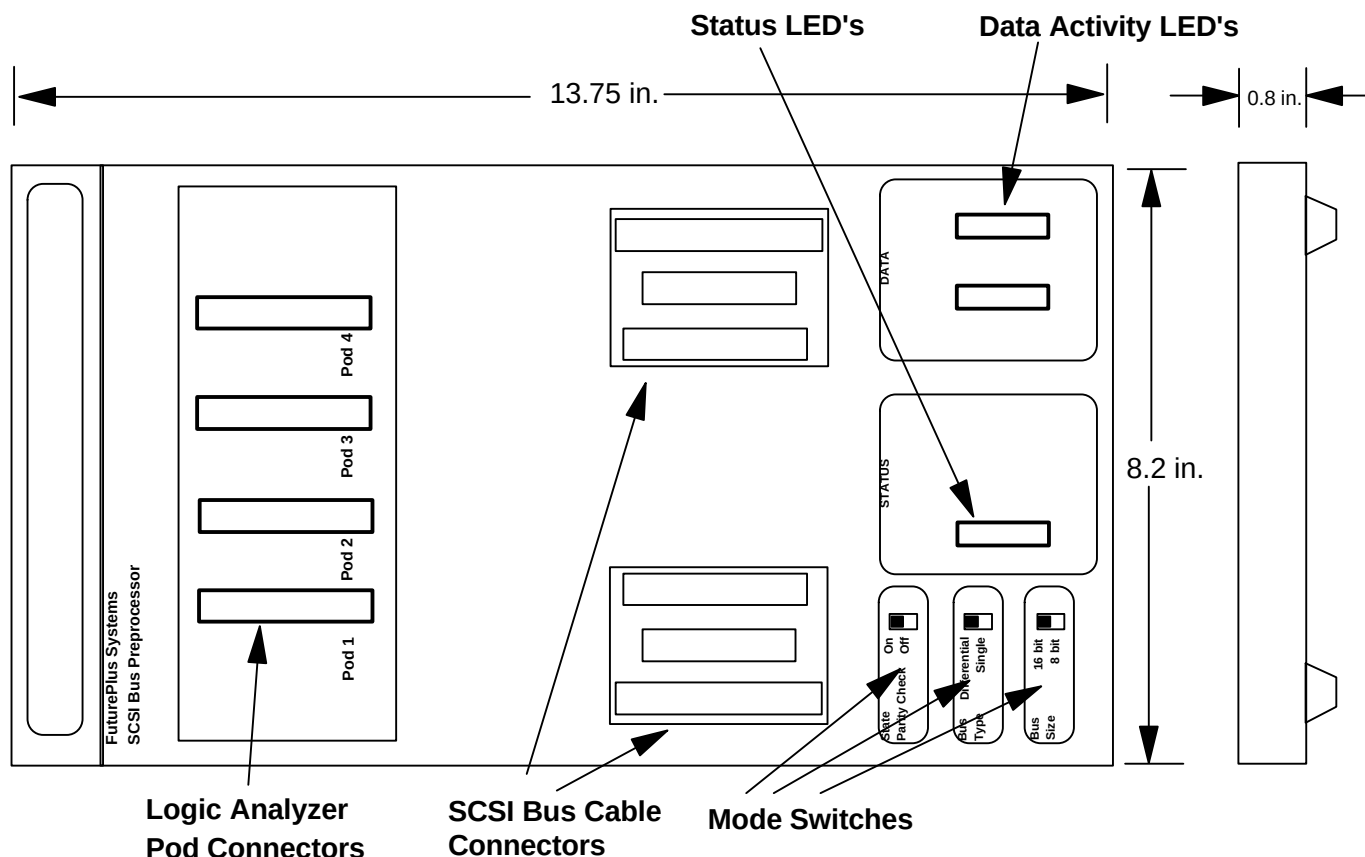
A simultaneous timing analysis capability allows you to easily see and correlate activity in the state domain with accurate timing measurements in the timing domain.

System Performance Analysis



The SCSI Analysis Probe and HP's System Performance Analysis software turn your HP logic analyzer into a powerful SCSI system performance analyzer.

Mechanical Drawing - FS2230 and FS2231



Product Summary

FS2230.....SCSI Bus Analyzer

FS2231.....LVD SCSI Bus Analyzer

We offer excellent Technical support and quick delivery.

Ask about The Bus Analyzer, our customer support newsletter!

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